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Dehydrating Food at Home

Adapted from [Space Food Nutrition](#) from NASA

Freeze-drying and other drying methods remove most of the water in foods. This food type (once rehydrated) provides a more solid-type diet and adds variety to the space flight menu.

Try making your own dehydrated food at home using your oven (or a dehydrator if you have one).

Ingredients:

Vegetables:

- fresh green beans

Fruits:

- fresh apples,
- peaches,
- grapes,
- strawberries,
- bananas

Lemon juice (for fruit)

Procedure:

1. Weigh the fruit or vegetable.
2. Cut up the food into small slices or pieces.
3. Place in the food dehydrator or oven, and dehydrate.
4. Remove from the dehydrator, and allow to cool before weighing by placing in a plastic sandwich bag (so no moisture will be reabsorbed).
5. Weigh dehydrated food, being careful to subtract the weight of the empty zip-locking plastic bag.
6. Calculate the percentage of moisture lost in the food sample using the equation:

$$\% \text{ Moisture Loss} = \frac{\text{original mass} - \text{dehydrated mass}}{\text{original mass}} \times 100$$



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Using your oven as a dehydrator:

Lemon juice (for fruits)

Wax paper

Cookie sheets (or any flat pan)

Prepping Food:

- To prevent fruits from turning brown, soak them in a half-and-half mixture of lemon juice and water for five minutes before drying.
- For foods to dry evenly and thoroughly, the pieces need to be the same size and thin. Around ¼-inch (0.63-centimeter) slices are best.
- Put a sheet of wax paper on your cookie sheet and lay your foods on top. This will prevent your food from sticking.

Oven Temperature:

The temperature of your oven is key for proper dehydration. Too hot and your foods will scorch or burn. You'll want the oven's temperature to be under 200 degrees Fahrenheit (93.3 Celsius) for the best results.

- Simply set your oven to "warm" and you'll be all set. If you do have low temperature options, 120 degrees F (49 degrees C) to 140 degrees F (60 degrees C) is usually optimal for a wide range of foods.
- In the beginning of the drying process, you can speed things along by cranking the heat up to 150 degrees to 160 degrees F (65 degrees to 70 degrees C) until the surface moisture has evaporated. As soon as the surface of the foods seem dry, lower the heat to 120 degrees F (49 degrees C) to 140 degrees F (60 degrees C).

Tips for success:

- Many ovens have hot spots that can cause some areas to dry faster than the others. Throughout the drying process, be sure to rotate the pans so they all dehydrate uniformly. This is particularly important when using a toaster oven because there usually isn't a fan to distribute heat evenly.
- Flip the foods over several times throughout the drying process so that all sides get dried evenly.
- Space the pans 1.5 inches (2.54 cm) apart so that air can circulate around the foods as they dry.
- Oven drying times vary, depending on the food. Plan on it taking 6 to 10 hours. Drier foods take less time, while juicier foods take longer. If the food is sticky or moist, it isn't done drying.

Share your results

Share photos of your Space Mac with us [#airandspace](#)